AMENDMENTS TO THE CLAIMS

1. (Original) A server apparatus provided in a communication system, wherein said server apparatus and a plurality of equipment including a request issuance equipment and a request acceptance equipment are each connected to a network, said server apparatus being operable to transfer a connection request signal from the request issuance equipment to the request acceptance equipment, said server apparatus comprising:

an equipment information storage device operable to store an equipment information list that includes a set of equipment information for each of the plurality of equipment, the set of equipment information including an IP address and a port number as associated with each of the plurality of equipment, and an equipment ID of each of the plurality of equipment;

wherein said server apparatus is operable to receive an equipment registration signal which includes a set of equipment information for the request acceptance equipment, and which is periodically transmitted from the request acceptance equipment, and is operable to store a set of equipment information for the request acceptance equipment included in the received equipment registration signal in said equipment information storage device;

wherein said server apparatus is operable to receive a first TCP connection start signal transmitted from the request issuance equipment for establishing a first TCP connection with the request issuance equipment;

wherein said server apparatus is operable to receive a first connection request signal which includes the equipment ID of the request acceptance equipment, and the IP address and the port number as associated with the request issuance equipment, and which is a request to the request acceptance equipment, from the request issuance equipment using the first TCP connection;

wherein said server apparatus is operable to search the equipment ID of the request acceptance equipment included in the received first connection request signal from the equipment information list, identify the equipment related to a set of equipment information that includes the equipment ID coincident with the equipment ID of the request acceptance equipment included in the first connection request signal as the

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request acceptance equipment, and identify the IP address and the port number included in a set of equipment information for the identified request acceptance equipment as the IP address and the port number as associated with the request acceptance equipment on the equipment information list; and

wherein said server apparatus is operable to transmit a second connection request signal that includes the IP address and the port number included in the received first connection request signal and associated with the request issuance equipment to the identified request acceptance equipment, as a response signal to the equipment registration signal, with the identified IP address and the identified port address set as a destination.

2. (Original) The server apparatus as claimed in claim 1,

wherein, after identifying the IP address and the port number included in a set of equipment information for the identified request acceptance equipment as the IP address and the port number as associated with the request acceptance equipment, and before transmitting the second connection request signal to the identified request acceptance equipment, said server apparatus transmits a third connection request signal to the request acceptance equipment, and receives a second TCP connection start signal from the request acceptance equipment as a response signal to the third connection request signal to establish a second TCP connection with the request acceptance equipment; and

wherein said server apparatus is operable to transmit the second connection request signal to the request acceptance equipment using the established second TCP connection.

3. (Original) The server apparatus as claimed in claim 2,

wherein the first connection request signal further includes password information for the request acceptance equipment; and

wherein said server apparatus is operable to add the password information included in the first connection request signal to the second connection request signal, and transmit the second connection request signal including the password information.

4. (Original) The server apparatus as claimed in claim 3,

wherein said server apparatus further comprises:

a first encryption communication device operable to generate a first common key for communication and a second common key for communication, decrypt the received signal using the first common key for communication, and encrypt the transmitted signal using the second common key for communication; and

a certificate information storage device operable to store server certificate information for certifying a validity of said server apparatus;

wherein said server apparatus is operable to transmit the server certificate information to the request issuance equipment before receiving the first connection request signal;

wherein said server apparatus is operable to receive first common key generation information generated in response to the server certificate information from the request issuance equipment using the first TCP connection, cause said first encryption communication device to generate second common key generation information in response to the first common key generation information, cause said first encryption communication device to generate the first common key for communication based on the first common key generation information and the second common key generation information, transmit the second common key generation information to the request issuance equipment using the first TCP connection, and cause the request issuance equipment to generate a common key for communication identical with the first common key for communication based on the first common key generation information and the second common key generation information to share the first common key for communication with the request issuance equipment;

wherein said server apparatus is operable to receive the first connection request signal encrypted using the first common key for communication, from the request issuance equipment using the first TCP connection, and cause said first encryption communication device to decrypt the received first connection request signal using the first common key for communication;

wherein, before transmitting the second connection request signal, said server apparatus transmits the server certificate information to the request acceptance equipment;

wherein said server apparatus is operable to receive third common key generation information generated in response to the server certificate information from the request acceptance equipment using the second TCP connection, cause said first encryption communication device to generate fourth common key generation information in response to the third common key generation information, causes said first encryption communication means to generate the second common key for communication based on the third common key generation information and the fourth common key generation information, transmit the fourth common key generation information to the request acceptance equipment using the second TCP connection, and cause the request acceptance equipment to generate a common key for communication identical with the second common key for communication based on the third common key generation information and the fourth common key generation information to share the second common key for communication with the request acceptance equipment; and

wherein, after receiving the first connection request signal and before transmitting the second connection request signal, said server apparatus causes said first encryption communication device to encrypt the second connection request signal using the second common key for communication.

5. (Original) A request issuance equipment provided in a communication system, wherein a server apparatus and a plurality of equipment including said request issuance equipment and a request acceptance equipment are each connected to a network, said request issuance equipment being operable to communicate with the server apparatus and the request acceptance equipment;

wherein said request issuance equipment is operable to transmit a first TCP connection start signal to the server apparatus for establishing a first TCP connection with the server apparatus;

wherein said request issuance equipment is operable to transmit a first connection request signal which includes an equipment ID of the request acceptance equipment, and

an IP address and a port number as associated with said request issuance equipment, and which is a request to the request acceptance equipment, to the server apparatus using the first TCP connection; and

wherein, after receiving a communication request signal for requesting a communication between said request issuance equipment and the request acceptance equipment from the request acceptance equipment, said request issuance equipment accepts the communication between said request issuance equipment and the request acceptance equipment in response to the communication request signal, and starts the communication with the request acceptance equipment.

6. (Original) The request issuance equipment as claimed in claim 5,

wherein the first connection request signal further includes password information for said request acceptance equipment.

7. (Original) The request issuance equipment as claimed in claim 6, further comprising:

a second encryption communication device operable to generate a first common key for communication, and encrypt the transmitted signal using the first common key for communication; and

a first certificate information authentication device operable to authenticate server certificate information for certifying a validity of the server apparatus;

wherein said request issuance equipment is operable to receive the server certificate information from the server apparatus before transmitting the first connection request signal;

wherein said request issuance equipment is operable to authenticate the received server certificate information by said first certificate information authentication device and confirm whether or not the received server certificate information is valid;

wherein, when confirming that the received server certificate information is valid, said request issuance equipment causes said second encryption communication device to generate first common key generation information, transmit the generated first common key generation information to the server apparatus using the first TCP connection,

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receive second common key generation information generated in response to the first common key generation information from the server apparatus using the first TCP connection, cause said second encryption communication device to generate the first common key for communication based on the first common key generation information and the second common key generation information, and cause the server apparatus to generate a common key for communication identical with the first common key for communication based on the first common key generation information and the second common key generation information to share the first common key for communication with the server apparatus;

wherein, before transmitting the first connection request signal, said request issuance equipment causes said second encryption communication device to encrypt the first connection request signal using the first common key for communication; and

wherein said request issuance equipment is operable to transmit the encrypted first connection request signal to the server apparatus using the first TCP connection.

8. (Original) A request acceptance equipment provided in a communication system, wherein a server apparatus and a plurality of equipment including a request issuance equipment and said request acceptance equipment are each connected to a network, said request acceptance equipment being operable to communicate with the server apparatus and the request issuance equipment, said request acceptance equipment comprising:

an equipment ID storage device operable to store an equipment ID of said request acceptance equipment;

wherein said request acceptance equipment is operable to periodically transmit an equipment registration signal which includes the equipment ID of said request acceptance equipment to the server apparatus;

wherein said request acceptance equipment is operable to receive a second connection request signal that includes an IP address and a port number as associated with the request issuance equipment from the server apparatus as a response signal to the equipment registration signal;

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wherein said request acceptance equipment is operable to transmit a communication request signal for requesting a communication between said request acceptance equipment and the request issuance equipment to the request issuance equipment represented by the IP address and the port number included in the received second connection request signal; and

wherein, after said request issuance equipment accepts the communication between said request acceptance equipment and the request issuance equipment in response to the communication request signal, said request acceptance equipment starts the communication with the request issuance equipment.

9. (Original) The request acceptance equipment as claimed in claim 8,

wherein, after transmitting the equipment registration signal to the server apparatus and before receiving the second connection request signal, said request acceptance equipment receives a third connection request signal from the server apparatus as a response signal to the equipment registration signal, and transmits a second TCP connection start signal to the server apparatus as a response signal to the third connection request signal to establish a second TCP connection with the server apparatus; and

wherein said request acceptance equipment is operable to receive the second connection request signal from the server apparatus using the established second TCP connection.

10. (Original) The request acceptance equipment as claimed in claim 9, further comprising:

a password information storage device operable to store password information for said request acceptance equipment;

wherein said request acceptance equipment is operable to receive the second connection request signal that further includes password information from the server apparatus using the second TCP connection; and

wherein said request acceptance equipment is operable to transmit the communication request signal to said request issuance equipment only when the

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password information included in the second connection request signal coincides with the password information for said request acceptance equipment stored in said password information storage device.

11. (Original) The request acceptance equipment as claimed in claim 10, further comprising:

a third encryption communication device operable to generate a second common key for communication, and decrypt the received signal using the second common key for communication; and

a second certificate information authentication device operable to authenticate server certificate information for certifying a validity of the server apparatus;

wherein, before receiving the second connection request signal, said request acceptance equipment receives the sever certificate information from the server apparatus;

wherein said request acceptance equipment is operable to cause said second certificate information authentication device to authenticate whether or not the received server certificate information is valid to confirm whether or not the received server certificate information is valid;

wherein, when confirming that the received server certificate information is valid, said request acceptance equipment causes said third encryption communication device to generate third common key generation information, transmit the generated third common key generation information to server apparatus using the second TCP connection, receive fourth common key generation information generated in response to the third common key generation information from the server apparatus using the second TCP connection, cause said third encryption communication device to generate the second common key for communication based on the second common key generation information and the fourth common key generation information, and cause the server apparatus to generate a common key for communication identical with the second common key for communication based on the third common key generation information and the fourth common key generation information to share the second common key for communication with the server apparatus; and

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wherein said request acceptance equipment is operable to receive the second connection request signal encrypted using the second common key for communication from the server apparatus using the second TCP connection, and cause said third encryption communication device to decrypt the received second connection request signal using the second common key for communication.

12. (Currently Amended) A communication system comprising:

a server apparatus;

a plurality of equipment, including a request issuance equipment and a request acceptance equipment;

said server apparatus comprising:as claimed in claim 1; and

an equipment information storage device operable to store an equipment information list that includes a set of equipment information for each of the plurality of equipment, the set of equipment information including an IP address and a port number as associated with each of the plurality of equipment, and an equipment ID of each of the plurality of equipment;

wherein said server apparatus is operable to receive an equipment registration signal which includes a set of equipment information for the request acceptance equipment, and which is periodically transmitted from the request acceptance equipment, and is operable to store a set of equipment information for the request acceptance equipment included in the received equipment registration signal in said equipment information storage device;

wherein said server apparatus is operable to receive a first TCP connection start signal transmitted from the request issuance equipment for establishing a first TCP connection with the request issuance equipment;

wherein said server apparatus is operable to receive a first connection request signal which includes the equipment ID of the request acceptance equipment, and the IP address and the port number as associated with the request issuance equipment, and which is a request to the request acceptance equipment, from the request issuance equipment using the first TCP connection;

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wherein said server apparatus is operable to search the equipment ID of the request acceptance equipment included in the received first connection request signal from the equipment information list, identify the equipment related to a set of equipment information that includes the equipment ID coincident with the equipment ID of the request acceptance equipment included in the first connection request signal as the request acceptance equipment, and identify the IP address and the port number included in a set of equipment information for the identified request acceptance equipment as the IP address and the port number as associated with the request acceptance equipment on the equipment information list;

wherein said server apparatus is operable to transmit a second connection request signal that includes the IP address and the port number included in the received first connection request signal and associated with the request issuance equipment to the identified request acceptance equipment, as a response signal to the equipment registration signal, with the identified IP address and the identified port address set as a destination;

said request issuance equipment being operable to communicate with the server apparatus and the request acceptance equipment;

wherein said request issuance equipment is operable to transmit a first TCP connection start signal to the server apparatus for establishing a first TCP connection with the server apparatus;

wherein said request issuance equipment is operable to transmit a first connection request signal which includes an equipment ID of the request acceptance equipment, and an IP address and a port number as associated with said request issuance equipment, and which is a request to the request acceptance equipment, to the server apparatus using the first TCP connection;

wherein, after receiving a communication request signal for requesting a communication between said request issuance equipment and the request acceptance equipment from the request acceptance equipment, said request issuance equipment accepts the communication between said request issuance equipment and the request acceptance equipment in response to the communication request signal, and starts the communication with the request acceptance equipment;

said request acceptance equipment being operable to communicate with the server apparatus and the request issuance equipment, and comprising an equipment ID storage device operable to store an equipment ID of said request acceptance equipment;

wherein said request acceptance equipment is operable to periodically transmit an equipment registration signal which includes the equipment ID of said request acceptance equipment to the server apparatus;

wherein said request acceptance equipment is operable to receive a second connection request signal that includes an IP address and a port number as associated with the request issuance equipment from the server apparatus as a response signal to the equipment registration signal;

wherein said request acceptance equipment is operable to transmit a communication request signal for requesting a communication between said request acceptance equipment and the request issuance equipment to the request issuance equipment represented by the IP address and the port number included in the received second connection request signal; and

wherein, after said request issuance equipment accepts the communication between said request acceptance equipment and the request issuance equipment in response to the communication request signal, said request acceptance equipment starts the communication with the request issuance equipment.

~~a plurality of equipment including said request issuance equipment as claimed in claim 5 and said request acceptance equipment as claimed in claim 8;~~

wherein each of said plurality of equipment and said server apparatus are connected to ~~the~~ a network.

13. (Currently Amended) ~~A~~ The communication system according to claim 12, ~~comprising:~~

~~said server apparatus as claimed in claim 2; and~~

~~a plurality of equipment including said request issuance equipment as claimed in claim 5 and said request acceptance equipment as claimed in claim 9;~~

wherein, after identifying the IP address and the port number included in a set of equipment information for the identified request acceptance equipment as the IP address

and the port number as associated with the request acceptance equipment, and before transmitting the second connection request signal to the identified request acceptance equipment, said server apparatus transmits a third connection request signal to the request acceptance equipment, and receives a second TCP connection start signal from the request acceptance equipment as a response signal to the third connection request signal to establish a second TCP connection with the request acceptance equipment;

wherein said server apparatus is operable to transmit the second connection request signal to the request acceptance equipment using the established second TCP connection;

wherein, after transmitting the equipment registration signal to the server apparatus and before receiving the second connection request signal, said request acceptance equipment receives a third connection request signal from the server apparatus as a response signal to the equipment registration signal, and transmits a second TCP connection start signal to the server apparatus as a response signal to the third connection request signal to establish a second TCP connection with the server apparatus; and

wherein said request acceptance equipment is operable to receive the second connection request signal from the server apparatus using the established second TCP connection.

~~wherein each of said plurality of equipment and said server apparatus are connected to the network.~~

14. (Currently Amended) ~~A~~The communication system according to claim 13, ~~comprising:~~

~~said server apparatus as claimed in claim 3; and~~

~~a plurality of equipment including said request issuance equipment as claimed in claim 6 and said request acceptance equipment as claimed in claim 10;~~

~~wherein each of said plurality of equipment and said server apparatus are connected to the network.~~

wherein the first connection request signal further includes password information for the request acceptance equipment;
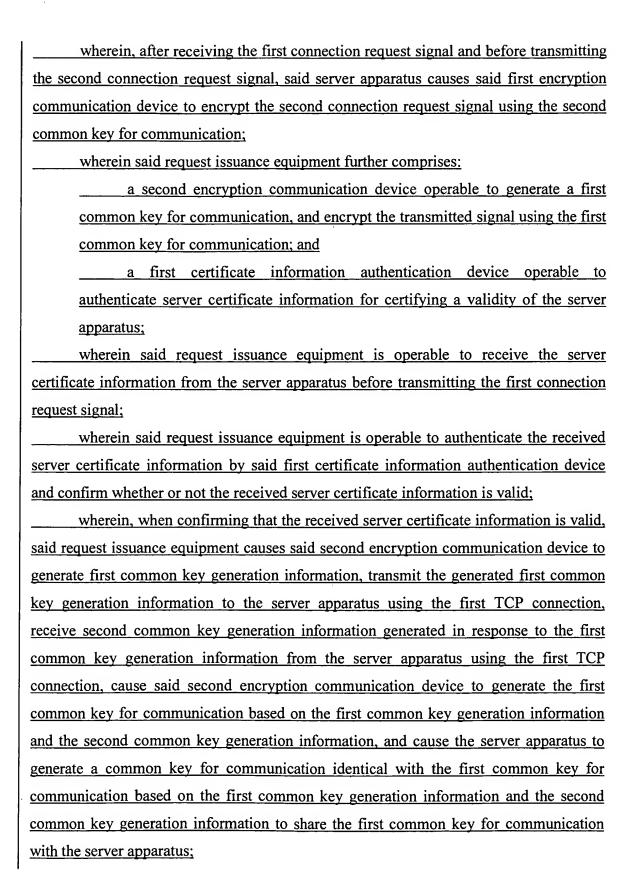
wherein said server apparatus is operable to add the password information included in the first connection request signal to the second connection request signal, and transmit the second connection request signal including the password information;

wherein said request acceptance equipment further comprises a password information storage device operable to store password information for said request acceptance equipment;

wherein said request acceptance equipment is operable to receive the second connection request signal that further includes password information from the server apparatus using the second TCP connection; and

wherein said request acceptance equipment is operable to transmit the communication request signal to said request issuance equipment only when the password information included in the second connection request signal coincides with the password information for said request acceptance equipment stored in said password information storage device.

15. (Currently Amended) A<u>The</u> communication system <u>according to claim 14,</u> ~~comprising:~~

<u>wherein said server apparatus further comprises:</u>

<u>a first encryption communication device operable to generate a first common key for communication and a second common key for communication, decrypt the received signal using the first common key for communication, and encrypt the transmitted signal using the second common key for communication; and</u>

<u>a certificate information storage device operable to store server certificate information for certifying a validity of said server apparatus;</u>

<u>wherein said server apparatus is operable to transmit the server certificate information to the request issuance equipment before receiving the first connection request signal;</u>

<u>wherein said server apparatus is operable to receive first common key generation information generated in response to the server certificate information from the request issuance equipment using the first TCP connection, cause said first encryption</u>

communication device to generate second common key generation information in response to the first common key generation information, cause said first encryption communication device to generate the first common key for communication based on the first common key generation information and the second common key generation information, transmit the second common key generation information to the request issuance equipment using the first TCP connection, and cause the request issuance equipment to generate a common key for communication identical with the first common key for communication based on the first common key generation information and the second common key generation information to share the first common key for communication with the request issuance equipment;

       wherein said server apparatus is operable to receive the first connection request signal encrypted using the first common key for communication, from the request issuance equipment using the first TCP connection, and cause said first encryption communication device to decrypt the received first connection request signal using the first common key for communication;

       wherein, before transmitting the second connection request signal, said server apparatus transmits the server certificate information to the request acceptance equipment;

       wherein said server apparatus is operable to receive third common key generation information generated in response to the server certificate information from the request acceptance equipment using the second TCP connection, cause said first encryption communication device to generate fourth common key generation information in response to the third common key generation information, causes said first encryption communication means to generate the second common key for communication based on the third common key generation information and the fourth common key generation information, transmit the fourth common key generation information to the request acceptance equipment using the second TCP connection, and cause the request acceptance equipment to generate a common key for communication identical with the second common key for communication based on the third common key generation information and the fourth common key generation information to share the second common key for communication with the request acceptance equipment;

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wherein, after receiving the first connection request signal and before transmitting the second connection request signal, said server apparatus causes said first encryption communication device to encrypt the second connection request signal using the second common key for communication;

wherein said request issuance equipment further comprises:

a second encryption communication device operable to generate a first common key for communication, and encrypt the transmitted signal using the first common key for communication; and

a first certificate information authentication device operable to authenticate server certificate information for certifying a validity of the server apparatus;

wherein said request issuance equipment is operable to receive the server certificate information from the server apparatus before transmitting the first connection request signal;

wherein said request issuance equipment is operable to authenticate the received server certificate information by said first certificate information authentication device and confirm whether or not the received server certificate information is valid;

wherein, when confirming that the received server certificate information is valid, said request issuance equipment causes said second encryption communication device to generate first common key generation information, transmit the generated first common key generation information to the server apparatus using the first TCP connection, receive second common key generation information generated in response to the first common key generation information from the server apparatus using the first TCP connection, cause said second encryption communication device to generate the first common key for communication based on the first common key generation information and the second common key generation information, and cause the server apparatus to generate a common key for communication identical with the first common key for communication based on the first common key generation information and the second common key generation information to share the first common key for communication with the server apparatus;

wherein, before transmitting the first connection request signal, said request issuance equipment causes said second encryption communication device to encrypt the first connection request signal using the first common key for communication;

wherein said request issuance equipment is operable to transmit the encrypted first connection request signal to the server apparatus using the first TCP connection

wherein said request acceptance equipment further comprises:

a third encryption communication device operable to generate a second common key for communication, and decrypt the received signal using the second common key for communication; and

a second certificate information authentication device operable to authenticate server certificate information for certifying a validity of the server apparatus;

wherein, before receiving the second connection request signal, said request acceptance equipment receives the sever certificate information from the server apparatus;

wherein said request acceptance equipment is operable to cause said second certificate information authentication device to authenticate whether or not the received server certificate information is valid to confirm whether or not the received server certificate information is valid;

wherein, when confirming that the received server certificate information is valid, said request acceptance equipment causes said third encryption communication device to generate third common key generation information, transmit the generated third common key generation information to server apparatus using the second TCP connection, receive fourth common key generation information generated in response to the third common key generation information from the server apparatus using the second TCP connection, cause said third encryption communication device to generate the second common key for communication based on the second common key generation information and the fourth common key generation information, and cause the server apparatus to generate a common key for communication identical with the second common key for communication based on the third common key generation information and the fourth common key generation information to share the second common key for communication with the server apparatus; and

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<u>wherein said request acceptance equipment is operable to receive the second connection request signal encrypted using the second common key for communication from the server apparatus using the second TCP connection, and cause said third encryption communication device to decrypt the received second connection request signal using the second common key for communication.</u>

~~said server apparatus as claimed in claim 4; and~~

~~a plurality of equipment including said request issuance equipment as claimed in claim 7 and said request acceptance equipment as claimed in claim 11;~~

~~wherein each of said plurality of equipment and said server apparatus are connected to the network.~~

16. (Original) A communication method using a server apparatus which is provided in a communication system, wherein the server apparatus and a plurality of equipments including a request issuance equipment and a request acceptance equipment are each connected to a network, the server apparatus being operable to transfer a connection request signal from the request issuance equipment to said request acceptance equipment;

wherein the server apparatus comprises an equipment information storage device operable to store an equipment information list that includes a set of equipment information for each of the plurality of equipments, the set equipment information including an IP address and a port number as associated with each of the plurality of equipment, and an equipment ID of each of the plurality of equipment;

wherein said communication method comprises:

receiving an equipment registration signal which includes a set of equipment information for the request acceptance equipment, and which is periodically transmitted from the request acceptance equipment, and storing a set of equipment information for the request acceptance equipment included in the received equipment registration signal in the equipment information storage device;

receiving a first TCP connection start signal transmitted from the request issuance equipment for establishing a first TCP connection with the request issuance equipment;

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receiving a first connection request signal which includes the equipment ID of the request acceptance equipment, and the IP address and the port number as associated with the request issuance equipment, and which is a request to the request acceptance equipment, from the request issuance equipment using the first TCP connection;

searching the equipment ID of the request acceptance equipment included in the received first connection request signal from the equipment information list, identifying the equipment related to a set of equipment information that includes the equipment ID coincident with the equipment ID of the request acceptance equipment included in the first connection request signal as the request acceptance equipment on the equipment information list, and identifying the IP address and the port number included in a set of equipment information for the identified request acceptance equipment as the IP address and the port number as associated with the request acceptance equipment on the equipment information list; and

transmitting a second connection request signal that includes the IP address and the port number included in the received first connection request signal and associated with the request issuance equipment to the identified request acceptance equipment, as a response signal to the equipment registration signal, with the identified IP address and the identified port address set as a destination.

17. (Original) The communication method as claimed in claim 16, further comprising:

after said identifying and before said transmitting the second connection request signal, transmitting a third connection request signal to the request acceptance equipment, and receiving a second TCP connection start signal from said request acceptance equipment as a response signal to the third connection request signal to establish a second TCP connection with the request acceptance equipment;

wherein said transmitting the second connection request signal includes transmitting the second connection request signal to the request acceptance equipment using the established second TCP connection.

18. (Original) The communication method as claimed in claim 17,

wherein the first connection request signal further includes password information for the request acceptance equipment; and

wherein said communication method further comprises adding the password information included in the first connection request signal to the second connection request signal, and transmitting the second connection signal including the password information.

19. (Original) The communication method as claimed in claim 18, further comprising:

transmitting server certificate information for certifying a validity of the server apparatus to the request issuance equipment before said receiving the first connection request signal;

receiving first common key generation information generated in response to the server certificate information from the request issuance equipment using the first TCP connection, generating second common key generation information in response to the first common key generation information, generating a first common key for communication based on the first common key generation information and the second common key generation information, transmitting the second common key generation information to the request issuance equipment using the first TCP connection, and causing the request issuance equipment to generate a common key for communication identical with the first common key for communication based on the first common key generation information and the second common key generation information to share the first common key for communication with the request issuance equipment;

receiving the first connection request signal encrypted using the first common key for communication from the request issuance equipment using the first TCP connection, and decrypting the received first connection request signal using the first common key for communication;

before said transmitting the second connection request signal, transmitting the server certificate information to the request acceptance equipment;

receiving third common key generation information generated in response to the server certificate information from the request acceptance equipment using the second

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TCP connection, generating fourth common key generation information in response to the third common key generation information, generating a second common key for communication based on the third common key generation information and the fourth common key generation information, transmitting the fourth common key generation information to the request acceptance equipment using the second TCP connection, and causing the request acceptance equipment to generate a common key for communication identical with the second common key for communication based on the third common key generation information and the fourth common key generation information to share the second common key for communication with the request acceptance equipment; and

after said receiving the first connection request signal and before said transmitting the second connection request signal, encrypting the second connection request signal using the second common key for communication.

20. (Original) A communication method using a request issuance equipment which is provided in a communication system, wherein a server apparatus and a plurality of equipments including the request issuance equipment and a request acceptance equipment are each connected to a network, the request issuance equipment being operable to communicate with the server apparatus and the request acceptance equipment, said communication method comprising:

transmitting a first TCP connection start signal to the server apparatus for establishing a first TCP connection with the server apparatus;

transmitting a first connection request signal which includes an equipment ID of the request acceptance equipment, and an IP address and a port number as associated with the request issuance equipment, and which is a request to the request acceptance equipment, to the server apparatus using the first TCP connection; and

after receiving a communication request signal for requesting a communication between the request issuance equipment and the request acceptance equipment from the request acceptance equipment, accepting the communication between the request issuance equipment and the request acceptance equipment in response to the communication request signal, and starting the communication with the request acceptance equipment.

21. (Original) The communication method as claimed in claim 20,

wherein the first connection request signal further includes password information for the request acceptance equipment.

22. (Original) The communication method as claimed in claim 21, further comprising:

receiving the server certificate information from the server apparatus before said transmitting the first connection request signal;

authenticating whether or not the received server certificate information is valid to confirm whether or not the received server certificate information is valid;

when confirming that the received server certificate information is valid, generating first common key generation information, transmitting the generated first common key generation information to the server apparatus using the first TCP connection, receiving second common key generation information generated in response to the first common key generation information from the server apparatus using the first TCP connection, generating a first common key for communication based on the first common key generation information and the second common key generation information, and causing the server apparatus to generate a common key for communication identical with the first common key for communication based on the first common key generation information and the second common key generation information to share the first common key for communication with the server apparatus;

before said transmitting the first connection request signal, encrypting the first connection request signal using the first common key for communication.

23. (Original) A communication method using a request acceptance equipment which is provided in a communication system, wherein a server apparatus and a plurality of equipment including a request issuance equipment and said request acceptance equipment are each connected to a network, the request acceptance equipment being operable to communicate with the server apparatus and the request issuance equipment, said communication method comprising:

periodically transmitting an equipment registration signal which includes an equipment ID of the request acceptance equipment to the server apparatus;

receiving a second connection request signal that includes an IP address and a port number as associated with the request issuance equipment from the server apparatus as a response signal to the equipment registration signal;

transmitting a communication request signal for requesting a communication between the request acceptance equipment and the request issuance equipment to the request issuance equipment represented by the IP address and the port number included in the received second connection request signal; and

after the request issuance equipment accepts the communication between the request acceptance equipment and the request issuance equipment in response to the communication request signal, starting the communication with the request issuance equipment.

24.   (Original)   The communication method as claimed in claim 23, further comprising:

after said transmitting the equipment registration signal to the server apparatus and before said receiving the second connection request signal, receiving a third connection request signal from the server apparatus as a response signal to the equipment registration signal, and transmitting a second TCP connection start signal to the server apparatus as a response signal to the third connection request signal to establish a second TCP connection with the server apparatus; and

receiving the second connection request signal from the server apparatus using the second TCP connection established.

25. (Original) The communication method as claimed in claim 24,

wherein the request acceptance equipment comprises a password information storage device operable to store password information for the request acceptance equipment;

wherein the second connection request signal further includes password information; and

wherein said communication method further comprises transmitting the communication request signal to the request issuance equipment only when the password information included in the second connection request signal coincides with the password information for the request acceptance equipment stored in the password information storage device.

26. (Original) The communication method as claimed in claim 25, further comprising:

before said receiving the second connection request signal, receiving the server certificate information from the server apparatus;

authenticating whether or not the received server certificate information is valid to confirm whether or not the received server certificate information is valid; and

when confirming that the received server certificate information is valid, generating third common key generation information, transmitting the generated third common key generation information to the server apparatus using the second TCP connection, receiving fourth common key generation information generated in response to the third common key generation information from the server apparatus using the second TCP connection, generating a second common key for communication based on the second common key generation information and the fourth common key generation information, and causing the server apparatus to generate a common key for communication identical with the second common key for communication based on the third common key generation information and the fourth common key generation information to share the second common key for communication with the server apparatus;

wherein said receiving the second connection request signal further includes decrypting the received second connection request signal using the second common key for communication.

27. (Currently Amended) A communication method using a communication system comprising a server apparatus and a plurality of equipment including a request issuance equipment and a request acceptance equipment;

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wherein each of the plurality of equipment and said server apparatus are connected to a network; and

the server apparatus being operable to transfer a connection request signal from the request issuance equipment to said request acceptance equipment;

wherein the server apparatus comprises an equipment information storage device operable to store an equipment information list that includes a set of equipment information for each of the plurality of equipments, the set equipment information including an IP address and a port number as associated with each of the plurality of equipment, and an equipment ID of each of the plurality of equipment;

wherein said communication method comprises:

~~the communication method as claimed in claim 16;~~

~~the communication method as claimed in claim 20, and~~

~~the communication method as claimed in claim 23.~~

receiving an equipment registration signal which includes a set of equipment information for the request acceptance equipment, and which is periodically transmitted from the request acceptance equipment, and storing a set of equipment information for the request acceptance equipment included in the received equipment registration signal in the equipment information storage device;

receiving a first TCP connection start signal transmitted from the request issuance equipment for establishing a first TCP connection with the request issuance equipment;

receiving a first connection request signal which includes the equipment ID of the request acceptance equipment, and the IP address and the port number as associated with the request issuance equipment, and which is a request to the request acceptance equipment, from the request issuance equipment using the first TCP connection;

searching the equipment ID of the request acceptance equipment included in the received first connection request signal from the equipment information list, identifying the equipment related to a set of equipment information that includes the equipment ID coincident with the equipment ID of the request acceptance equipment included in the first connection request signal as the request acceptance equipment on the equipment information list, and identifying the IP address and the port number included in a set of equipment information for the identified request acceptance equipment as the IP address

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and the port number as associated with the request acceptance equipment on the equipment information list;

transmitting a second connection request signal that includes the IP address and the port number included in the received first connection request signal and associated with the request issuance equipment to the identified request acceptance equipment, as a response signal to the equipment registration signal, with the identified IP address and the identified port address set as a destination;

transmitting a first TCP connection start signal to the server apparatus for establishing a first TCP connection with the server apparatus;

transmitting a first connection request signal which includes an equipment ID of the request acceptance equipment, and an IP address and a port number as associated with the request issuance equipment, and which is a request to the request acceptance equipment, to the server apparatus using the first TCP connection;

after receiving a communication request signal for requesting a communication between the request issuance equipment and the request acceptance equipment from the request acceptance equipment, accepting the communication between the request issuance equipment and the request acceptance equipment in response to the communication request signal, and starting the communication with the request acceptance equipment;

periodically transmitting an equipment registration signal which includes an equipment ID of the request acceptance equipment to the server apparatus;

receiving a second connection request signal that includes an IP address and a port number as associated with the request issuance equipment from the server apparatus as a response signal to the equipment registration signal;

transmitting a communication request signal for requesting a communication between the request acceptance equipment and the request issuance equipment to the request issuance equipment represented by the IP address and the port number included in the received second connection request signal; and

after the request issuance equipment accepts the communication between the request acceptance equipment and the request issuance equipment in response to the

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communication request signal, starting the communication with the request issuance equipment.

28. (Currently Amended) A~~The~~ communication method according to claim 27, further comprising: ~~using a communication system comprising a server apparatus and a plurality of equipment including a request issuance equipment and a request acceptance equipment;~~

~~wherein each of the plurality of equipment and the server apparatus are connected to a network; and~~

~~wherein said communication method comprises:~~

~~the communication method as claimed in claim 17;~~

~~the communication method as claimed in claim 20, and;~~

~~the communication method as claimed in claim 24.~~

after said identifying and before said transmitting the second connection request signal, transmitting a third connection request signal to the request acceptance equipment, and receiving a second TCP connection start signal from said request acceptance equipment as a response signal to the third connection request signal to establish a second TCP connection with the request acceptance equipment;

wherein said transmitting the second connection request signal includes transmitting the second connection request signal to the request acceptance equipment using the established second TCP connection;

after said transmitting the equipment registration signal to the server apparatus and before said receiving the second connection request signal, receiving a third connection request signal from the server apparatus as a response signal to the equipment registration signal, and transmitting a second TCP connection start signal to the server apparatus as a response signal to the third connection request signal to establish a second TCP connection with the server apparatus; and

receiving the second connection request signal from the server apparatus using the second TCP connection established.

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29. (Currently Amended) A~~The~~ communication method according to claim 28, ~~using a communication system comprising a server apparatus and a plurality of equipment including a request issuance equipment and a request acceptance equipment;~~

~~wherein each of the plurality of equipments and the server apparatus are connected to a network; and~~

~~wherein said communication method comprises;~~

~~the communication method as claimed in claim 18;~~

~~the communication method as claimed in claim 21; and~~

~~the communication method as claimed in claim 25.~~

wherein the first connection request signal further includes password information for the request acceptance equipment;

wherein said communication method further comprises adding the password information included in the first connection request signal to the second connection request signal, and transmitting the second connection signal including the password information;

wherein the first connection request signal further includes password information for the request acceptance equipment;

wherein the request acceptance equipment comprises a password information storage device operable to store password information for the request acceptance equipment;

wherein the second connection request signal further includes password information; and

wherein said communication method further comprises transmitting the communication request signal to the request issuance equipment only when the password information included in the second connection request signal coincides with the password information for the request acceptance equipment stored in the password information storage device.

30. (Currently Amended) A~~The~~ communication method according to claim 29, further comprising: ~~using a communication system comprising a server apparatus and a~~

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plurality of equipment including a request issuance equipment and a request acceptance
equipment,

wherein each of the plurality of equipment and the server apparatus are connected
to a network; and

wherein said communication method comprises:

the communication method as claimed in claim 19;

the communication method as claimed in claim 22; and

the communication method as claimed in claim 26.

transmitting server certificate information for certifying a validity of the server
apparatus to the request issuance equipment before said receiving the first connection
request signal;

receiving first common key generation information generated in response to the
server certificate information from the request issuance equipment using the first TCP
connection, generating second common key generation information in response to the
first common key generation information, generating a first common key for
communication based on the first common key generation information and the second
common key generation information, transmitting the second common key generation
information to the request issuance equipment using the first TCP connection, and
causing the request issuance equipment to generate a common key for communication
identical with the first common key for communication based on the first common key
generation information and the second common key generation information to share the
first common key for communication with the request issuance equipment;

receiving the first connection request signal encrypted using the first common key
for communication from the request issuance equipment using the first TCP connection,
and decrypting the received first connection request signal using the first common key for
communication;

before said transmitting the second connection request signal, transmitting the
server certificate information to the request acceptance equipment;

receiving third common key generation information generated in response to the
server certificate information from the request acceptance equipment using the second
TCP connection, generating fourth common key generation information in response to

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the third common key generation information, generating a second common key for communication based on the third common key generation information and the fourth common key generation information, transmitting the fourth common key generation information to the request acceptance equipment using the second TCP connection, and causing the request acceptance equipment to generate a common key for communication identical with the second common key for communication based on the third common key generation information and the fourth common key generation information to share the second common key for communication with the request acceptance equipment;

after said receiving the first connection request signal and before said transmitting the second connection request signal, encrypting the second connection request signal using the second common key for communication;

receiving the server certificate information from the server apparatus before said transmitting the first connection request signal;

authenticating whether or not the received server certificate information is valid to confirm whether or not the received server certificate information is valid;

when confirming that the received server certificate information is valid, generating first common key generation information, transmitting the generated first common key generation information to the server apparatus using the first TCP connection, receiving second common key generation information generated in response to the first common key generation information from the server apparatus using the first TCP connection, generating a first common key for communication based on the first common key generation information and the second common key generation information, and causing the server apparatus to generate a common key for communication identical with the first common key for communication based on the first common key generation information and the second common key generation information to share the first common key for communication with the server apparatus;

before said transmitting the first connection request signal, encrypting the first connection request signal using the first common key for communication;

before said receiving the second connection request signal, receiving the server certificate information from the server apparatus;

_____ authenticating whether or not the received server certificate information is valid to confirm whether or not the received server certificate information is valid; and

_____ when confirming that the received server certificate information is valid, generating third common key generation information, transmitting the generated third common key generation information to the server apparatus using the second TCP connection, receiving fourth common key generation information generated in response to the third common key generation information from the server apparatus using the second TCP connection, generating a second common key for communication based on the second common key generation information and the fourth common key generation information, and causing the server apparatus to generate a common key for communication identical with the second common key for communication based on the third common key generation information and the fourth common key generation information to share the second common key for communication with the server apparatus; and

_____ wherein said receiving the second connection request signal further includes decrypting the received second connection request signal using the second common key for communication.

31. ((Original) A program for causing a computer to perform the communication method as claimed in claim 16.

32. (Original) A program for causing a computer to perform the communication method as claimed in claim 20.

33. (Original) A program for causing a computer to perform the communication method as claimed in claim 23.

34. (Original) A program for causing a computer to perform the communication method as claimed in claim 27.